



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
NEWPORT, DELAWARE 19804

cc: R. Z. Fortney/
V. A. Romito
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CHEMICALS, DYES AND PIGMENTS DEPARTMENT

Newport, Delaware
August 28, 1978

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J. D. LOJEWSKI
CHEMICALS, DYES AND PIGMENTS DEPARTMENT
WILMINGTON

MINERAL DEPOSIT FROM LITHOPONE MANUFACTURE

The attached aerial photo shows revised Basin Road where it meets the south end of the bridge across the Christina River. The inked outline in the lower left-hand corner locates the mineral deposit involved with the alteration.

There are two monitor wells on the south side of the river, about 1,500-1,800 feet west of the bridge, designated DM-4 and DM-5. They are not in the mineral deposit. Their purpose is to check for migration of chemicals in ground water under the river from the closed landfill on the north side. The analysis of the water from these wells is given below in parts per million.

DM-4

	<u>Barium</u>	<u>Cadmium</u>	<u>Chromium</u>	<u>Cyanide</u>	<u>Iron</u>	<u>Lead</u>	<u>Zinc</u>
7/1/77	1.25	.038	< .02	< .01	< .1	< .01	.93
8/10/77	.54	.004	.03	< .005	.05	.02	.64
10/14/77	8.2	.04	.11	.009	.07	< .2	.49
3/30/78	< .5	.005	.14	.010	.14	.006	1.6
Avg.	< 2.625	.021	< .075	< .0085	< .09	< .06	.92

DM-5

	<u>Barium</u>	<u>Cadmium</u>	<u>Chromium</u>	<u>Cyanide</u>	<u>Iron</u>	<u>Lead</u>	<u>Zinc</u>
7/1/77	1.71	.01	.04	< .01	< .1	< .01	.45
8/10/77	.94	.018	.04	< .005	< .05	.05	.59
10/14/77	2.59	.05	.12	.006	.06	< .20	.49
3/30/78	3.5	.011	.18	.008	.20	.018	2.3
Avg.	2.185	.02	.095	.0072	.103	.07	.95

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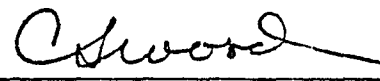
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Although not involved with Basin Road, a substantial part of the mineral deposit was covered with fill dredged from adjacent marsh land when the southern approach to the new Route 141 bridge across the Christina was built. Correspondence and permits from the Army Corps of Engineers are attached.

R. Z. FORTNEY, PLANT MANAGER

By:


C. F. Wood

CFW/mlb
Attachments

AR200261

BACKGROUND INFORMATION

In the manufacture of Lithopone, the mineral Barytes, which contains Barium Sulfate, was roasted in furnaces or a kiln with coal to give Barium Sulfide. The Barium Sulfide was leached from the nonsoluble material in the ore and coal. These nonsolubles were pumped through a hose under the Christina River to the south bank near the bridge on Route 141.

The Krebs Company started operation in 1902. Business was rapidly expanded in 1916-18. As far as I know, all of the nonsoluble mineral slurry from startup to shut down in 1953 was pumped to the south bank location. Two years' ago, I became interested in the quantity and exact location of the disposal area. Discussion with a knowledgeable pensioner about the operation forty-five years' ago confirmed my suspicions. The 1931 aerial photo appears to provide further evidence. When the operation was shut down in 1953, the area was covered with one to two feet of top soil. Grass and trees slowly took root. These roots stop at the Sulfide bearing deposit.

There are two monitor wells on the south bank of the river upstream and nearer the river than the deposit. Under the "Grandfather Clause," it has never been necessary to notify the State of this deposit. The plant continued to operate another landfill on the north side of the creek for trash. It was officially shut down in the early 70's and the State so notified.

Two years' ago, when the County was installing the 72" sewer force main through plant property, south of the river, I cautioned the County and contractor engineers about digging the trench through the deposit. They were told that there was a possibility that residual suflides might still be present which are a powerful dipilatory. When the original fill was in operation, H₂S could be easily detected a mile away. However, when the trench was dug, the deposit was found to be solidified into something like soft sand-stone, with only a faint odor of sulfide. No problems arose during the construction period.

CFW/mlb
8/28/78

AR200262